

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1-42. (Canceled)

43. (Previously presented) An oligonucleotide which has the formula (in 5' to 3' order): A-B-C-D, in which,

A represents a sequence of locked nucleotide units;

B represents a sequence of non-locked nucleotide units, wherein B has a length of 4-20 nucleotide units;

C represents a sequence of locked nucleotide units; and

D represents a non-locked nucleotide unit or a sequence of non-locked nucleotide units.

44-46. (Canceled)

47. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of between 2-6 nucleotide units;

B has a length of between 4-12 nucleotide units;

C has a length of between 1-5 nucleotide units;

D has a length of between 1-3 nucleotide units;

and the overall length of the oligonucleotide is between 8-26 nucleotide units.

48. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has between 1-2 nucleotide units;
and the overall length of the oligonucleotide is between 12-21 nucleotide units.

49. (Previously presented) An oligonucleotide according to claim 43, wherein:
A has a length of 2-5 nucleotide units;
B has a length between 7-9 nucleotide units;
C has a length of 2-4 nucleotide units;
D has a length of 1-2 nucleotide units;
and the overall length of the oligonucleotide is between 15-17 nucleotide units.

50. (Previously presented) An oligonucleotide according to claim 43, wherein:
A has a length of 4 nucleotide units;
B has a length of 8 nucleotide units;
C has a length of 3 nucleotide units;
D has 1 nucleotide unit;
and the overall length of the oligonucleotide is 16 nucleotide units.

51. (Previously presented) An oligonucleotide according to claim 43, in which the
locked nucleotide units in A and C are beta-D-oxy-LNA units.

52. (Canceled)

53. (Previously presented) An oligonucleotide according to claim 94, in which the
locked nucleotide units in A and C are beta-D-oxy-LNA units.

54. (Canceled)

55. (Previously presented) An oligonucleotide according to claim 47, in which the
locked nucleotide units in A and C are beta-D-oxy-LNA units.

56. (Previously presented) An oligonucleotide according to claim 48, in which the locked nucleotide units in A and C are beta-D-oxy-LNA units.

57. (Previously presented) An oligonucleotide according to claim 49, in which the locked nucleotide units in A and C are beta-D-oxy-LNA units.

58. (Previously presented) An oligonucleotide according to claim 50, in which the locked nucleotide units in A and C are beta-D-oxy-LNA units.

59. (Previously presented) An oligonucleotide according to claim 43, wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

60. (Previously presented) An oligonucleotide according to claim 43, in which B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

61. (Previously presented) An oligonucleotide according to claim 43, in which B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

62. (Previously presented) An oligonucleotide according to claim 43, in which B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

63. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has a length between 1-2 nucleotide units;

the overall length of the oligonucleotide is between 12-21 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

64. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has a length between 1-2 nucleotide units;

the overall length of the oligonucleotide is between 12-21 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

65. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has a length between 1-2 nucleotide units;

the overall length of the oligonucleotide is between 12-21 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

66. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has a length between 1-2 nucleotide units;

the overall length of the oligonucleotide is between 12-21 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

67. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-6 nucleotide units;

B has a length between 4-12 nucleotide units;

C has a length between 1-5 nucleotide units;

D has a length between 1-3 nucleotide units;

the overall length of the oligonucleotide is between 8-26 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

68. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-6 nucleotide units;

B has a length between 4-12 nucleotide units;

C has a length between 1-5 nucleotide units;

D has a length between 1-3 nucleotide units;

the overall length of the oligonucleotide is between 8-26 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

69. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-6 nucleotide units;

B has a length between 4-12 nucleotide units;

C has a length between 1-5 nucleotide units;

D has a length between 1-3 nucleotide units;
the overall length of the oligonucleotide is between 8-26 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

70. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-6 nucleotide units;
B has a length between 4-12 nucleotide units;
C has a length between 1-5 nucleotide units;
D has a length between 1-3 nucleotide units;

the overall length of the oligonucleotide is between 8-26 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

71. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;
B has a length between 7-9 nucleotide units;
C has a length of 3 nucleotide units;
D has 1 nucleotide unit;

the overall length of the oligonucleotide is between 15-17 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

72. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;
B has a length between 7-9 nucleotide units;
C has a length of 3 nucleotide units;
D has 1 nucleotide unit;

the overall length of the oligonucleotide is between 15-17 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein the internucleoside linkages

independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

73. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length between 7-9 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is between 15-17 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

74. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length between 7-9 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is between 15-17 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

75. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of 8 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is 16 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B represents a sequence of nucleotide

units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

76. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of 8 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is 16 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

77. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of 8 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is 16 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

78. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of 8 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is 16 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

79. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of between 7-9 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is between 15-17 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid; and wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

80. (Previously presented) An oligonucleotide according to claim 79, wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

81. (Previously presented) An oligonucleotide according to claim 79, wherein B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

82. (Previously presented) An oligonucleotide according to claim 43, wherein B has a length of between 4-12 nucleotide units.

83. (Previously presented) An oligonucleotide according to claim 43, wherein B has a length of between 6-20 nucleotide units.

84. (Previously presented) An oligonucleotide according to claim 43, wherein B has a length of between 7-20 nucleotide units.

85. (Previously presented) An oligonucleotide according to claim 43, wherein B has a length of between 8-20 nucleotide units.

86. (Previously presented) An oligonucleotide according to claim 43, wherein B has a sequence that comprises at least one DNA nucleotide unit.

87. (Previously presented) An oligonucleotide according to claim 43, wherein B has a sequence that consists of DNA nucleotide units.

88. (Previously presented) An oligonucleotide according to claim 83, wherein B has a sequence that comprises at least one DNA nucleotide unit.

89. (Previously presented) An oligonucleotide according to claim 83, wherein B has a sequence that consists of DNA nucleotide units.

90. (Previously presented) An oligonucleotide according to claim 84, wherein B has a sequence that comprises at least one DNA nucleotide unit.

91. (Previously presented) An oligonucleotide according to claim 84, wherein B has a sequence that consists of DNA nucleotide units.

92. (Previously presented) An oligonucleotide according to claim 85, wherein B has a sequence that comprises at least one DNA nucleotide unit.

93. (Previously presented) An oligonucleotide according to claim 85, wherein B has a sequence that consists of DNA nucleotide units.

94. (Previously presented) An oligonucleotide which has the formula (in 5' to 3' order): A-B-C-D, in which:

A represents a sequence of locked nucleotide units;

B represents a sequence of non-locked nucleotide units, wherein B has a length of 4-20 nucleotide units and wherein at least one unit within B has a 2'-deoxy pentofuranose sugar moiety;

C represents a sequence of locked nucleotide units; and

D represents a non-locked nucleotide unit or a sequence of non-locked nucleotide units.

95. (Previously presented) An oligonucleotide according to claim 85, wherein B has a sequence that comprises at least one DNA nucleotide unit.

96. (Previously presented) An oligonucleotide according to claim 85, wherein B has a sequence that consists of DNA nucleotide units.